IN THE CLAIMS

Upon entry of the present amendment, the status of the claims will be as is shown below. This listing of claims replaces all previous versions and listings of claims in the present application.

1-20 (Canceled)

21. (New) A phase offsetting method, comprising:

inverting a sign of signed binary data to obtain a first phase offset of a multiple of 90°; and

calculating a phase shift to provide the sign-inverted signed binary data a second phase offset smaller than 90°.

22. (New) The phase offsetting method according to claim 21,

wherein, when a phase and an amplitude of a signal are adjusted, the sign of the signed binary data is inverted before the amplitude of the signal is adjusted.

23. (New) A phase offsetter, comprising:

a sign inverter that inverts a sign of signed binary data to obtain a first phase offset of a multiple of 90°; and

a phase shift calculator that calculates a phase shift to provide the sign-inverted signed binary data a second phase offset smaller than 90°.

24. (New) The phase offsetter according to claim 23, the phase shift calculator comprising:

a fixed phase shift calculation section that provides a signal a predetermined amount of a fixed phase offset,

wherein a control signal is used to determine whether to provide a signal with the fixed phase offset.

25. (New) A phase offset calculator, comprising:

a sign inverter that inverts a sign of signed binary data to obtain a first phase offset of a multiple of 90°;

an amplitude adjuster that adjusts an amplitude of a signal output from the sign inverter; and

a phase offsetter that provides a second phase offset smaller than 90° to a signal output from the amplitude adjuster.

26. (New) A signal point mapper for mapping a QPSK modulation signal in a phase space, comprising:

a sign inverter that inverts a sign of the QPSK modulation signal to obtain a first phase offset of a multiple of 90°;

an amplitude adjuster that adjusts an amplitude of a signal output from the sign inverter; and

a phase offsetter that provides a second phase offset smaller than 90° to a signal output from the amplitude adjuster.

27. (New) The signal point mapper according to claim 26, the phase offsetter comprising:

a fixed phase offsetter that provides a predetermined amount of a fixed phase offset,

wherein the phase offsetter controls a total phase offset amount with the phase offset implemented by the sign inverter to become a desired offset amount.

28. (New) A CDMA transmission apparatus for controlling a phase and amplitude of a transmission signal by closed-loop control, comprising:

a signal point mapper having:

a sign inverter that inverts a sign of a QPSK modulation signal to obtain a first phase offset of a multiple of 90°;

an amplitude adjuster that adjusts an amplitude of a signal output from the sign inverter; and

a phase offsetter that calculates a second phase offset smaller than 90° with a signal output from the amplitude adjuster; and

a transmission controller that provides control information to the signal point mapper based on a message included in a reception signal from a receiver that receives communication signals from the CDMA transmission apparatus.

29. (New) The CDMA transmission apparatus according to claim 28, the phase offsetter comprising:

a fixed phase offsetter that provides a predetermined amount of a fixed phase offset.

30. (New) The CDMA transmission apparatus according to claim 28,

wherein the phase and amplitude can be controlled for every transmit channel.

31. (New) The CDMA transmission apparatus according to claim 29,

wherein the phase and amplitude can be controlled for every transmit channel.

32. (New) A transmit diversity method that implements closed loop transmit diversity for controlling a phase and amplitude of a transmission signal from a transmitter based on a message from a receiver that receives the transmission signal from the transmitter, comprising:

inverting a sign of a QPSK modulation signal to obtain a first phase offset of a multiple of 90°;

adjusting an amplitude of the QPSK modulation signal after the sign inversion; and

calculating a second phase offset smaller than 90° with the QPSK modulation signal after the amplitude adjusting.